



DEPARTMENT OF THE NAVY  
OFFICE OF THE SECRETARY  
WASHINGTON, D.C. 20350-1000

SECNAVINST 5100.16  
ASN (I&E)  
06 October 1995

SECNAV INSTRUCTION 5100.16

From: Secretary of the Navy

Subj: GAS-FREE ENGINEER CERTIFICATION/RECERTIFICATION PROCESS

Ref: (a) Asst Sec Labor (OSHA) ltr of 25 Jan 94 (NOTAL)  
(b) NAVSEA S6470-AA-SAF-010, Navy Maritime Gas Free Engineering Program Manual (NOTAL)

Encl: (1) Application for Certification as a Navy Gas-Free Engineer at Maritime Facilities  
(2) Qualifications for Navy Gas Free Engineers  
(3) Application for Recertification as a Navy Gas Free Engineer

1. Purpose. To set policy for the certification of Gas-Free Engineers (GFEs) for service in naval maritime facilities and to establish a Navy GFE Certification Board to ensure compliance with the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) Alternate Standard requirements, reference (a), as set forth in Navy Maritime Gas Free Engineering Program Manual, reference (b).

2. Definitions

a. Gas-Free Engineer (GFE). The holder of a valid Certificate issued by the Navy GFE Certification Board establishing the holder as a person qualified to ensure that confined space operations incident to construction, overhaul, repair, lay-up, or shipbreaking of naval vessels are undertaken with safety.

b. Candidate. A Navy employee applying for certification or recertification as a GFE.

c. Navy GFE Certification Board. A panel of personnel organized for the purpose of certification and/or recertification of Navy GFEs.

d. Application Form. The form, a copy of which is included as enclosure (1), must be completed and forwarded to the Navy GFE Certification Board by the candidate when applying for initial certification as a Navy GFE.



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e. Maritime Facilities. Those facilities where maritime operations are performed on or in vessels or vessel sections. Specific definitions of terms are included in 29 CFR 1915.4 and OPNAVINST 5100.23D. Maritime operations include shipbuilding, ship repair, shipbreaking and related employment. Navy maritime facilities include shipyards, ship repair facilities, shore intermediate maintenance facilities, and may include certain weapons/warfare centers and naval stations.

3. Background. The OSHA regulations require confined spaces aboard vessels to be inspected and certified as Safe for Hot Work before work can begin. The OSHA regulation 29 CFR 1915.14 specifies that certifications can be authorized only by a Certified Marine Chemist or a person authorized by the U.S. Coast Guard for U.S. flag vessels. For entry to perform hot work in maritime operations, the Navy has historically used Navy Gas Free Engineers. Thus, under the provisions of 29 CFR 1960.17, the Department of the Navy requested OSHA to grant the Navy an Alternate Standard and recognize Navy Gas Free Engineers as qualified persons to certify Navy shipboard spaces Safe for Hot Work while in Navy maritime facilities.

OSHA granted, in reference (a), the Navy's request with a stipulation that a Qualification Board be established to certify that only qualified persons would be designated as Navy Gas Free Engineers.

4. Requirements. In order to perform hot work in confined spaces onboard Navy vessels, the activity must have the space(s) certified as Safe for Hot Work by either a Certified Navy Gas Free Engineer or a Certified Marine Chemist.

5. Navy GFE Certification Board. A Navy GFE Certification Board (hereinafter called the Board) is established.

a. The Board membership shall be composed of personnel who are qualified in one or more of the following areas: federal and Navy regulations/standards pertaining to ship construction, overhaul and/or repair; industrial hygiene; shipyard safety, loss control and accident prevention; fire prevention; and, gas-free testing/marine chemistry. It shall consist of seven (7) voting members with representation as follows: the Office of the Assistant Secretary of the Navy for Installations and Environment (ASN(I&E)); the Environmental Protection, Safety, and Occupational Health Division (N45), Chief of Naval Operations; the Environmental and Occupational Safety and Health (OSH) Office, Commander, Naval Sea Systems Command (COMNAVSEASYSOM); two Naval Shipyards; a fleet shore command representative and OSHA. The Naval Shipyard representatives shall be nominated

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by the COMNAVSEASYS COM, with the approval of the respective shipyard commander. The OSHA representative shall be nominated by that agency. In addition, the Navy Office of General Counsel will provide legal advice to the Board.

b. The term of each Naval Shipyard representative to the Board shall be limited to no more than 6 years. The other members of the Board shall serve at the discretion of the offices they represent.

c. The Board shall act on the applications for certification as a GFE and may certify or deny certification to a candidate.

d. The Board shall provide oversight of the Navy GFE program, including process review and quality of GFE certificate writing. The Board shall review the performance of all GFEs: (1) at least every 5 years and, appropriately, recertify or decertify the GFE; and (2) after an incident involving an individual GFE or the GFE's shipyard/ship repair facility program. The Board may participate, as desired, in incident investigations to assess GFE actions. Periodic reviews of the performance of Navy GFEs, including on-site visits, may be made as deemed necessary by the Board.

e. The representative of the ASN(I&E) shall serve as the Board's Chair who shall appoint a Secretary to the Board.

f. The Secretary of the Board shall: receive applications for certification; compile the dossier of all information associated with an application; provide each application to the Board for action; and, perform such other duties as may be requested by the Board.

6. Certificate. The Board shall issue a Certificate to successful candidates as evidence that the holder has met the qualifications for certification or recertification as a GFE.

7. Applicability. The requirements for certification of Gas Free Engineers under this policy apply to Department of the Navy civilian employees who perform hot work certifications on or in Naval vessels or vessel sections.



CHERYL KANDARAS  
Assistant Secretary of the Navy  
(Installations and Environment)  
(Acting)

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**APPLICATION FOR CERTIFICATION AS A NAVY GAS-FREE ENGINEER  
AT NAVY MARITIME FACILITIES***(Please complete Items 1-9 below after reading the Privacy Act Statement attached.)*1. Name: \_\_\_\_\_ 2. Phone: \_\_\_\_\_ 3. Activity: \_\_\_\_\_  
(Last) (First) (MI)4. Physical Qualifications: *(Submit completed Standard Form No. 78, Certificate of Medical Examination or equivalent evidence of physical fitness to perform GFE tasks.)*

\_\_\_\_ Standard Form No. 78 \_\_\_\_ Other evidence of fitness provided as Attachment \_\_\_\_

5. Professional Qualifications:

a. Education: \_\_\_\_\_  
(Degree) (Major) (Institution) (Date)\_\_\_\_\_  
(Degree) (Major) (Institution) (Date)b. College Level Chemistry Courses: *(List by name/number (if known) including lecture/lab. Use addenda sheets as needed.)*\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_c. Other College Level Courses: *(List such courses in related areas as fire sciences, industrial hygiene, engineering, safety. Use addenda sheets as needed.)*\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_d. Other Training: *(List other pertinent training courses such as NFPA Marine Chemist Modules, DOL/OSHA, etc. completed.)*\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

e. Navy Occupational Safety and Health and Environmental Training Center Course A-493-0030: Date \_\_\_\_\_ Score \_\_\_\_\_

f. Full-time Experience: List progressively responsible experience obtained during full-time employment in a shipyard or ship repair facility performing duties related to: ship design, construction or repair; occupational safety and health; shipboard fire prevention/protection; or, industrial hygiene. Provide the necessary data of such experience as an attachment hereto listing employers, location and periods of employment describing in detail the duties and level of involvement in each citation of experience; include the types of equipment and instruments used in performing the duties.

Full-time experience data provided as Attachment \_\_\_\_\_ hereto.

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6. Practical Qualifications: Provide, as separate attachment hereto, the record of On-the-Job-Training (OJT) completed. The record must include as a minimum the following information on each major experience: location (shipyard); number of hours; name of trainer; name of ship or barge; identification of tanks or spaces inspected; type of work in progress; tests performed; test instruments used.

Record of OJT provided as Attachment \_\_\_\_ hereto.

Total number of OJT hours completed = \_\_\_\_\_.

7. References: (List three or more persons to whom inquiry may be made concerning your character/ability to function as a GFE)

Full Name

Telephone

Address

8. I hereby declare that, to the best of my knowledge and belief, all of my statements and information furnished herewith are true, correct, complete, and made in good faith.

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

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For Board Use Only

Approved: \_\_\_\_\_ Disapproved: \_\_\_\_\_ More Information Needed: \_\_\_\_\_

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*Please detach this Privacy Statement before submitting Certification Application*

**Privacy Act Statement**

SECNAVINST 5100.10G authorizes collection of this information. The principal purpose is to provide information to the Navy Gas Free Engineer (GFE) Certification Board relevant to the decision to certify candidates as Navy GFEs and regarding the performance of Navy GFEs relevant to the decision to recertify or decertify Navy GFEs. In addition to those disclosures permitted under 5 USC 552a(b) of the Privacy Act, this information may specifically be disclosed outside the DoD as a routine use under 5 USC 552a(b)3 to the Navy GFE Certification Board for the purpose of certifying, recertifying, and decertifying Navy GFEs and GFE candidates. The 'Blanket Routine Uses' that appear at the beginning of the Department of the Navy's compilation of systems notices apply to this system. Disclosure of this information is voluntary; however, failure to provide the information may affect participation in the Navy GFE Certification Program.

Enclosure (1)

## QUALIFICATIONS FOR NAVY GAS FREE ENGINEERS

The following general, professional and practical qualifications are considered to be minimal for favorable consideration of any application by the Board.

### a. General

(1) Candidates shall be physically able to perform the duties of a GFE.

(2) Candidates for Certification shall be employees of the Navy Department.

(3) Candidates shall furnish the Board with such evidence of their education, training, knowledge, and experience and any other information as the Board considers necessary or advisable.

### b. Professional

(1) The candidate GFE shall have earned a BS degree in Science or Engineering; or, as acceptable to the Board, have the equivalent in experience and/or education per the Office of Personnel Management (OPM) guidelines (which includes general inorganic, organic, qualitative and quantitative college level chemistry courses with labs) and have 3 years of progressively responsible experience related to gas-free engineering, safety, industrial hygiene, fire protection or a similar area, at least one of which shall have been full time employment at a naval maritime facility.

(2) The education, training, knowledge and experience of the GFE candidate shall include, but not be limited to, the following subjects:

- (a) Basic shipyard safety;
- (b) Fire prevention and emergency rescue;
- (c) Combustion and explosion technology;
- (d) Entry into shipboard confined spaces;
- (e) Principles of gas-freeing and shipboard testing;
- (f) Tank cleaning and inerting procedures;

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- (g) Fundamentals of industrial hygiene;
- (h) Properties of flammable and combustible materials;
- (i) Properties of toxic gases, vapors and fumes;
- (j) Properties of hazardous cargoes and materials;
- (k) Properties of tank coatings and preservatives;
- (l) Testing for toxic gases, vapors, fumes and residues; and,
- (m) Test instruments and their calibration.

(3) The candidate shall satisfactorily complete the Naval Occupational Safety and Health and Environmental Training Center Course A-493-0030, Confined Space Safety, attaining a grade of 90 percent or higher for the course.

c. Practical. In addition to the professional qualifications set forth in the preceding subparagraph, each candidate shall have completed or obtained:

(1) Three hundred hours or more of OJT in maritime gas-free engineering operations on naval vessels and vessel sections under the supervision of a Navy GFE or Certified Marine Chemist, or other experience as deemed acceptable to the Board; and,

(2) Working knowledge of the construction of naval vessels including machinery spaces, cargo handling systems, hull and superstructure compartmentation systems, and piping systems.

Enclosure (2)



**APPLICATION FOR RECERTIFICATION AS A NAVY GAS-FREE ENGINEER**

1. Name: \_\_\_\_\_ 2. Phone: \_\_\_\_\_  
(Last) (First) (MI)
3. Activity: \_\_\_\_\_ 4. Code: \_\_\_\_\_
5. Physical Qualifications: (Submit completed Standard Form No.78, Certificate of Medical Examination or equivalent evidence of physical fitness to perform GFE tasks.)  
\_\_\_\_\_ Standard Form No.78  
\_\_\_\_\_ Other evidence of fitness provided as Attachment \_\_\_\_.
6. Additional Training:  
a. College Courses: (List courses taken since the last certification in related areas as fire sciences, industrial hygiene, engineering, safety. List by name/number (if known). Use addenda sheets as needed.)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
b. Other Training: (List other pertinent training courses such as NFPA Marine Chemist Modules, DOL/OSHA, etc. completed since the last certification.)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
7. Provide a statement of professional activities during the past 5 years. A summary of the number and types of vessels inspected is desired.  
\_\_\_\_\_  
\_\_\_\_\_
8. Copies of 10 certificates issued during the past 6 months.
9. I hereby declare that, to the best of my knowledge and belief, all of my statements and information furnished herewith are true, correct, complete, and made in good faith.

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

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Enclosure (3)